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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/081,376	02/21/2002	John J. Gregel	ERICP0328USA	9648

7590 12/22/2003

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EXAMINER

FITZGERALD, JOHN P

ART UNIT	PAPER NUMBER
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3637

DATE MAILED: 12/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n N .

10/081,376

Applicant(s)

GREGEL ET AL.

Examiner

John P Fitzgerald

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-- The MAILING DATE of this communication appears n the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 20033.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15,20-22 and 26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15, 20-22 and 26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

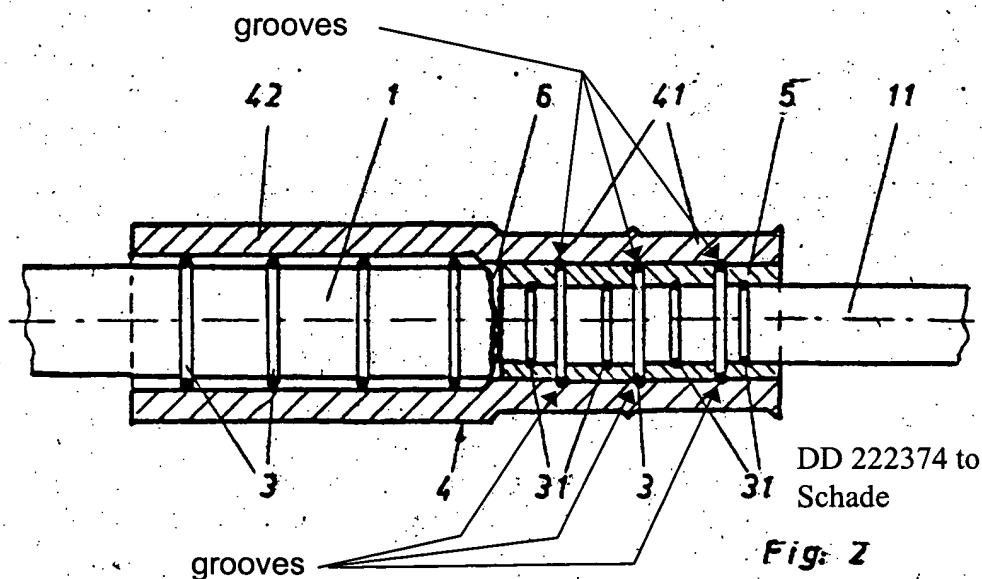
1. In view of applicant's amendment filed 29 September 2003, rejections under 35 U.S.C. § 112, second paragraph, are withdrawn.

Claim Rejections - 35 USC § 103

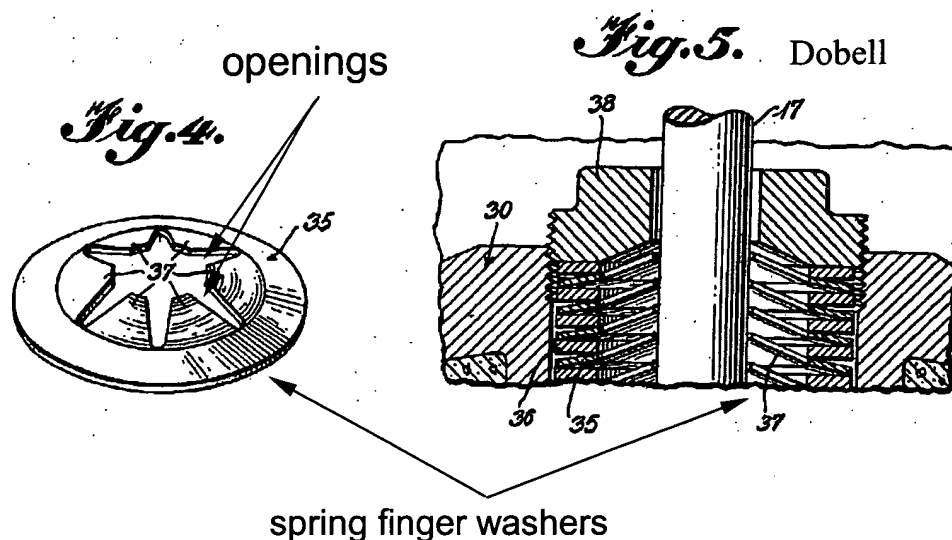
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 1-3 and 13 are rejected under 35 U.S.C. § 103(a) as being unpatentable over DD 222374 to Schade et al. and Dobell. DD 222374 to Schade et al. discloses a reinforcing bar connection (Figs. 1 and 2) for joining two reinforcing bars (1, 11) end-to-end for use in reinforced concrete construction, comprising a sleeve (42); two sets of three to ten flexible metal ring washers (3) mounted and oppositely arranged in the sleeve which are "adapted to" expand around the reinforcing bar ends projecting into each end of the sleeve and to grip the bar ends to prevent withdrawal and wherein the sets of flexible metal ring washers include between three and ten. DD 222374 to Schade et al. does not expressly disclose a reinforcing bar connection wherein the washers further include spring fingers having a generally channel-shape cross-section formations. Dobell teaches a reinforced bar end connector for use in a reinforced concrete construction (Figs. 1-5) having a sleeve (30) within which a plurality of spring finger washers (37) having a generally channel-shape cross-section are mounted having a flexible inner edge "adapted to" expand around the reinforcing bar (17) end to bite into and grip the bar end to prevent withdrawal after the bar end has been inserted into the sleeve in the final assembled configuration (Dobell: col. 6, lines 45-75). It would have been obvious to one having ordinary

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skill in the art at the time the invention was made to employ the spring finger washers taught by Dobell, modifying the reinforcing bar connection disclosed by DD 222374 to Schade et al., thus allowing gripping the reinforced bar while maintaining sufficient resiliency so as to distribute the load between the plurality of washers (DD 222374 to Schade et al.: col. 4, lines 53-59). Further regarding claim 13, DD 222374 to Schade et al. further discloses four washers mounted in relation to bar end (1) and three washers mounted in relation to bar end (11). Dobell teaches approximately twenty spring fingered washers related to bar end (17). It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ any number of spring fingered washers mounted within the sleeve in corresponding grooves, thus preventing withdrawal of the reinforcing bar ends based on design choice and engineering design concerns.



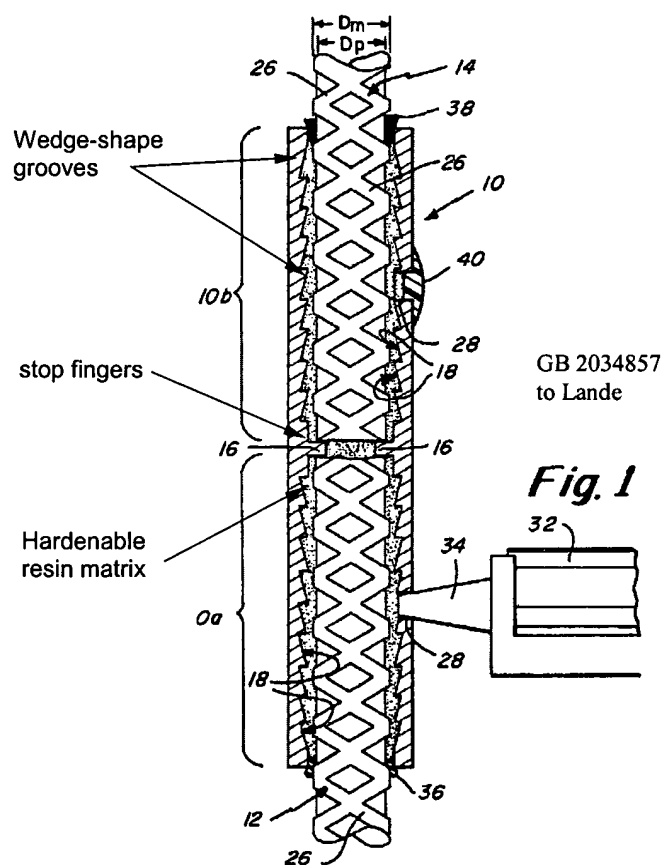
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4. Claims 4, 5, 9-12 and 26 are rejected under 35 U.S.C. § 103(a) as being unpatentable over DD 222374 to Schade et al. and Dobell as applied to claims 1-3 above, and further in view of GB 2034857 to Lande. DD 222374 to Schade et al. and Dobell disclose a reinforcing bar connection having all of the elements stated previously. DD 222374 to Schade et al. further discloses a reinforcing bar connection wherein the outside of each of the flexible metal spring washers are mounted in grooves (see Fig. 2 above). Dobell further teaches openings in the spring finger washers (see Fig. 4 above). DD 222374 to Schade et al. and Dobell do not expressly disclose a reinforcing bar connection including a hardenable matrix filling the sleeve after the bar is inserted; wherein the hardenable matrix is a resin; including at least one wedge-shaped groove in the interior of the sleeve at an end thereof forming a shoulder facing the end; including a plurality of wedge-shape grooves and shoulders at each end of the sleeve; wherein the wedge surface of the wedge-shape groove tapers to a smaller diameter toward the end of the sleeve and the shoulder is formed at the larger diameter. GB 2034857 to Lande teaches a reinforcing bar connection (Figs. 1-16) including a plurality of wedge-shaped grooves and

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shoulders (18, 20, 22) at each end of the sleeve; wherein the wedge surface of the wedge-shape grooves tapers to a smaller diameter toward the end of the sleeve and the shoulder is formed at the larger diameter; wherein a hardenable matrix of resin filling the sleeve after the bar is inserted (GB 2034857 to Lande: page 2, lines 88-92). It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ at least one or a plurality of wedge-shaped grooves in the interior of the sleeve and a hardenable matrix of resin filling the sleeve, as taught by GB 2034857 to Lande, thus having resin pass through the openings of the spring finger washers as well as cooperating with the wedge-shaped grooves and shoulders in a manner which significantly increases the tensile strength of the joint (GB 2034857 to Lande: page 3, lines 1-10).



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5. Claims 6-8, 11, 12 and 20-22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over DD 222374 to Schade et al., Dobell and GB 2034857 to Lande, as applied to claims 1 and 4 above, and further in view of GB 2192210 to Kadota. DD 222374 to Schade et al., Dobell and GB 2034857 to Lande disclose a reinforcing bar connection having all of the elements stated previously. GB 2034857 to Lande further discloses stop fingers (16) mounted in the sleeve to limit the extent of insertion of the bar ends inserted into the sleeve. DD 222374 to Schade et al., Dobell and GB 2034857 to Lande do not expressly disclose a reinforcing bar connection wherein the hardenable matrix is a grout; including a stop-washer inserted in the sleeve to limit the extent of insertion of the bar ends inserted into the sleeve; wherein the stop-washer includes a central hole having a diameter less than that of the bar ends. GB 2192210 to Kadota teaches a reinforcing bar connection (Figs. 1-4) wherein a hardenable matrix of grout (34) (GB 2192210 to Kadota: page 2, line 127) is applied within a sleeve (10) acting in conjunction with a washer (15) having a central hole (Fig. 3) with a diameter less than that of the bar ends. It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a hardenable matrix of grout, and to modify the stop-fingers to a stop-washer, as taught by GB 2192210 to Kadota; modifying the reinforcing bar connection disclosed by DD 222374 to Schade et al., Dobell and GB 2034857 to Lande, thus providing a very secure and rigid bond and interaction between the grout, the reinforcing bars and the sleeve (GB 2192210 to Kadota: page 2, lines 117-128). Furthermore, it would have been an obvious matter of design choice to employ any type or shape of stopper means to limit the extent of the bar ends inserted into the sleeve, since applicant has not disclosed that a circular shape with a central hole solves any stated problem or is for any particular purpose and it appears that the invention would perform

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equally well with any type of stopper means provided the hardenable matrix is allowed to flow in and around the junction point of the two bar ends within the sleeve. Additionally, forming the various elements of the reinforcing bar end connection with integral or separable components is considered well within the ordinary skill of one in the art. Lastly, regarding the method claims of 20-22, GB 2034857 to Lande teaches the step of providing a plurality of wedge shaped grooves and shoulders in each end of the sleeve and the introduction of a hardenable matrix within the sleeve; Dobell teaches the insertion of spring fingered washers inserted in an end of a sleeve; DD 222374 to Schade et al. teach the insertion of a plurality of flexible ring washers oppositely arranged in the sleeve to grip the bar ends and prevent withdrawal. It would have been obvious to one of ordinary skill in the art to employ the method steps recited in claims 20-22, utilizing the teachings of DD 222374 to Schade et al., Dobell and GB 2034857 to Lande to form a reinforced bar end connection with all of the recited elements.

Response to Arguments

6. Applicant's arguments filed 29 September 2003 have been fully considered but they are not persuasive.
7. In response to applicant's argument that the combination of the Schade and Dobell references is not obvious, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Specifically,

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Applicant argues that the reinforcement bar connector disclosed by Schade is not applicable, alone or in combination with the Dobell reference. The Examiner respectfully disagrees. In claim 1, Applicant broadly claims, in part: "a sleeve," "spring finger washers mounted in said sleeve" and additional aspects of the spring finger washers. Due this broad recitation, Applicant's arguments with respect to the method of forming the Schade reinforcement bar connection (specifically, pressing, forming grooves to increase friction between the "sleeve" and the reinforcement bar. The Dobell reference teaches the "spring finger washers" and all of the recited limitations of the "spring finger washers." The Dobell reference is clearly used in concrete structures, thus entirely applicable in combination with the Schade reference. The Examiner respectfully disagrees with Applicant's argument that the "crimping" or "pressing" of the sleeve would destroy the integrity and structure of the pronged plates. One of ordinary skill in the art would be able to fashion the reinforcement bar connection to maintain the integrity of the spring finger washers, and as such, meets the obviousness applied to method claims 20-22.

Conclusion

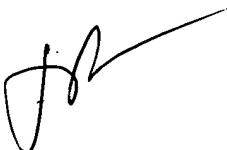
8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John P. Fitzgerald whose telephone number is (703) 305-4851. The examiner can normally be reached on Monday-Friday from 7:00 AM to 3:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lanna Mai, can be reached on (703) 308-2486. The fax phone number for the organization where this application or proceeding is assigned is (703)-872-9306. Any inquiry of a general nature relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-1113.



JF

12/15/2003

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